

>X-Sieve: CMU Sieve 2.3
>DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;
> d=gmail.com; s=gamma;
> h=domainkey-signature:received:received:message-id:date:from:to
> :subject:mime-version:content-type;
> bh=xNW5NomLJFousiDAdwVfNyf4cJvydd2EX0FQPw/7sRI=;
> b=kDPMq1/OcZTQUTUo08DQUf2VdZgblxMT+hDDc85Z5j6RX9l5eauigfphLk0f81MIH
> 2QAhBbLkK46oY/3Z0TmNqgvHhm3gebNDR0EkvkPwwKuglacDeQUXmm1P70jZawSQJkRt
> /kqQUQsZrM0qQPMuVuKP6FMQkdSCNmywQKRuo=
>DomainKey-Signature: a=rsa-sha1; c=noFWS;
> d=gmail.com; s=gamma;
> h=message-id:date:from:to:subject:mime-version:content-type;
> b=NQCQNpYzSPi4tTFnCfts6rMOPTZTmCuRSO3mORjAxouH6CM23wPEEHZ12NMb7NxEeb
> mPL50gDhQ8W6rLsB8pS69Y6poiUW0172HP112a/GOGtk1CfHunEBuR5RuEV79Fbej/4t
> Nm26vxbA9miUnnDdysDOD6ACldBGMdS/w8m5Y=
>Date: Mon, 15 Sep 2008 08:45:56 -0500
>From: "James Gourley" <jrpatent@gmail.com>
>To: wtc@nist.gov, "Stephen Cauffman" <cauffman@nist.gov>
>Subject: WTC 7 Public Comments
>X-Proofpoint-Virus-Version: vendor=fsecure
>engine=1.12.7160:2.4.4,1.2.40,4.0.166
>definitions=2008-09-15_09:2008-09-02,2008-09-15,2008-09-15 signatures=0
>X-PP-SpamDetails: rule=spampolicy1_notspam policy=spampolicy1 score=0
>adultscore=0 classifier=spam adjust=0 reason=mlx
>engine=5.0.0-0805090000 definitions=main-0809150070
>X-PP-SpamScore: 0
>X-NIST-MailScanner: Found to be clean
>X-NIST-MailScanner-From: jrpatent@gmail.com
>X-NIST-MailScanner-Information:
>
>WTC Technical Information Repository
>Attention: Mr. Stephen Cauffman
>National Institute of Standards and Technology Stop 8610 Gaithersburg,
>MD 20899-8610
>
>September 15, 2008
>
>Dear Stephen,
>
>Attached to this email is a set of public comments on the NIST WTC 7
>draft report. The names of all of the submitters, with their
>affiliations, is at the end of the document. Please let me know if you
>have any trouble opening the attachment, which is in PDF format. I
>will send it separately in Microsoft Word format, and in email format.
>
>Best regards,
>
>James R. Gourley, Esq.
>Content-Type: application/pdf; name="WTC 7 Public Comments.pdf"
>X-Attachment-Id: f_fl55e4300
>Content-Disposition: attachment; filename="WTC 7 Public Comments.pdf"

via Electronic Mail: wtc@nist.gov

WTC Technical Information Repository

Attention: Mr. Stephen Cauffman

National Institute of Standards and Technology

Stop 8610

Gaithersburg, MD 20899-8610

September 15, 2008

Re: Public Comments on WTC 7 Draft Reports

Dear Mr. Cauffman,

I am writing on behalf of a group of scientists, scholars, engineers and building professionals who are dedicated to scientific research regarding the destruction of all three high-rise buildings (WTC 1, 2 and 7) on September 11, 2001. We have examined the draft reports recently released by NIST purporting to explain the demise of WTC Building 7 (collectively referred to herein as the "Report"). We have found many areas that need to be revised and re-examined by NIST personnel before they release a final report on this matter. We have provided our names and affiliations at the end of this document, in accordance with the guidelines for submittal of comments promulgated by NIST at (<http://wtc.nist.gov/media/comments2008.html>).

At the outset, we would like to call attention to the fact that we requested a reasonable extension of time for the public to submit comments. Given the rate at which we were finding incorrect or contradictory statements in the Report, we would likely have found many more areas NIST needs to re-examine before issuing a final report. As we pointed out in our original correspondence with you requesting the extension, the original three week deadline was completely unreasonable. First, it took NIST more than three years to compile this 1000+ page Report. Why, then, were members of the public only given three weeks in which to comment? Moreover, NIST lists ten authors and dozens of contracted and employed staff, which over the three year investigation would yield somewhere in the neighborhood of 200,000 man-hours of labor. How did NIST expect members of the public to match or even come close to NIST's labor expenditure in three weeks? This first reason alone was enough to warrant a significant extension in the deadline for public comment.

Second, in NIST's "Questions and Answers" page (http://www.nist.gov/public_affairs/factsheet/wtc_qa_082108.html), NIST has attempted to refute many of the points that members of our group and others have made regarding the WTC 7 destruction. However, NIST did not provide any references to sections of the Report that support its alleged refutations. How is a member of the public, then, able to

verify NIST's refutation without reading through the entire 1000+ page Report? Our comments are directed to many of the areas addressed in the "Questions and Answers" page, and without citations directly to the Report itself, it was extremely difficult and time consuming for us see whether our main criticisms of the NIST theory of collapse have been adequately addressed in the Report. This is especially true in light of the fact that this latest draft Report is the third different story NIST has come up with.

Your response to our request was dismissive, based primarily on your belief that a six-week comment period on the 10,000 page report NIST issued for the Twin Towers was reasonable. You also saw no problem with NIST's failure to provide any references in its Questions and Answers page to the 1000 page Report itself, apparently satisfied with NIST committing the logical fallacy of appeal to authority. As things stand right now, your position in this matter can be seen as nothing less than a deliberate attempt to hamstring the public's ability to review and comment on NIST's work in this extremely important area of research.

Nevertheless, we have been able to spend some time reading and analyzing the report, and have already found numerous problems that severely undermine its veracity and usefulness. Our comments on the Report are detailed below. Note that we declined NIST's invitation to comment only on the summary report, NCSTAR 1A. These comments are all regarding the more detailed NCSTAR 1-9 document. Of course, once NCSTAR 1-9 is revised according to these comments, the summary report NCSTAR 1A will need to be revised as well.

Based on our comments below, it is readily apparent that the NIST collapse explanation relies solely on extremely suspect computer models. Furthermore, at each juncture where NIST was given the opportunity to input data into each subsequent model, NIST has chosen to use those inputs which would cause the highest temperatures and the most amount of structural damage. Therefore, the submitters of these comments hereby call on NIST to publicly release its models and modeling data so that members of the scientific community can test whether other, more reasonable, assumptions will also result in global collapse of the structure. After all, a scientific hypothesis cannot be widely accepted unless it is repeatable by others.

Chapter 9: Fire Simulations

Contradictions between Floor 12 Fire Simulations and Other Evidence

Figure 9-11 from NCSTAR 1-9 (page 383) depicts the upper layer air temperatures on the 12th floor fire simulation. As can be seen therein, significant fires are present across at least half of the north face of the building at 5:00pm.

This part of the fire simulation presents two problems. First, it contradicts an earlier report issued by NIST regarding the fires on floor 12. Second, it contradicts NIST's own photographic evidence of the fire activity on floor 12.

COMMENT: Appendix L to NIST’s June 2004 “Progress Report on the Federal Building and Fire Safety Investigation of the World Trade Center” contains NIST’s “Interim Report on WTC 7”. (See http://wtc.nist.gov/progress_report_june04/appendixl.pdf) On page L-26 of this interim report, NIST states that “Around 4:45 p.m., a photograph showed fires on Floors 7, 8, 9, and 11 near the middle of the north face; Floor 12 was burned out by this time.”

REASON FOR COMMENT: The contrast between NIST’s prior assertion that floor 12 was “burned out” by 4:45pm, and NIST’s current computer model, that shows a raging inferno at 5:00pm, could not be more apparent. This discrepancy calls into question the veracity of the Report.

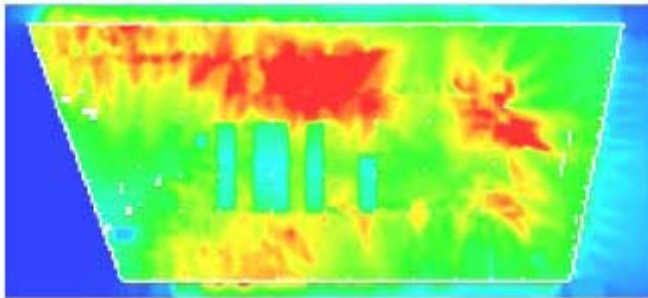
SUGGESTED REVISION: This discrepancy must be acknowledged and explained in the Report. Furthermore, the photographic or other visual evidence NIST relied upon for its statement in Appendix L that floor 12 was burned out by 4:45pm must be included in the final version of its report.

COMMENT: To support NIST’s assertion that there was indeed fire present on floor 12 at 5:00pm, NIST has provided a single photograph from an “unknown source” (Figure 5-152, NCSTAR 1-9, p. 237), that was purportedly taken at around 5:00pm, and shows fire in the two windows that comprise the northwest corner. NIST contends that it has determined that this photograph was taken at approximately 5:00pm, with a margin of error of “at least 10 minutes,” using shadow analysis.

REASON FOR COMMENT: We find it unlikely that NIST could estimate the time the “unknown source” photograph in Figure 5-152 was taken with such accuracy.

SUGGESTED REVISION: NIST must explain how it was able to estimate the photograph’s time using shadow analysis to a margin of error even close to 10 minutes.

COMMENT: The following graphic is excerpted from Figure 9-11, and purports to describe the state of the fires on the 12th floor of WTC 7 at 5:00pm:



As can be seen, this graphic depicts raging fires across at least half of the north face of the building. However, when compared with Figure 5-152, which only shows a small fire in the extreme northwest corner, clearly the computer model is not representative of reality.

REASON FOR COMMENT: It appears that NIST's computer fire simulations are not representative at all of the fires actually occurring in WTC 7.

SUGGESTED REVISION: NIST needs to describe why (assuming Figure 5-152 accurately describes the floor 12 fires at about 5:00pm) the computer models show significant fires across at least half of the north side of the building at 5:00pm. NIST should clearly explain why its fire simulation models of the 12th floor should be accepted by the public as an accurate representation of the fires actually occurring in WTC 7.

Separately submitted by Chris Sarns and Richard Gage is a graphic that compares NIST's computer model fire data for floor 12 with actual pictures of the fires in WTC 7. It is attached hereto as Exhibit A. They present a more realistic depiction of what a computer model for the floor 12 fires should look like if it were to agree with the available visual evidence. NIST should take this into consideration when they are re-running their computer models based on these public comments, and revise their Report to use computer models that are more representative of reality, which would look more like the depictions contained therein.

Combustible Fuel Loading on Floors 11 and 12

COMMENT: This comment relates to NIST's assumptions regarding combustible fuel loading for the 11th and 12th floors. In NCSTAR 1-9, at p. 375 (para. 1, sent. 7-9) NIST states:

NIST assumed that the combustible mass of furniture was about the same in an office as in a cubicle. Since the loading of other combustibles was reported to have been high on the 11th and 12th floors (Chapter 3), NIST assumed that the total combustible mass in an office was double that of a cubicle. Thus, the average combustible fuel load on the 11th and 12th floors was estimated as 32kg/m².

However, Chapter 3 tells us that, contrary to NIST's assertions in Chapter 9, the loading of other combustibles was not reported to have been high on the 11th and 12th floors. On page 55 (para. 6, sent. 1) of NCSTAR 1-9, NIST reports that the U.S. Securities and Exchange Commission occupied the 11th and 12th floors and the north side of the 13th floor. On page 56 (para. 1, sent. 1) NIST further reports that American Express occupied the southwest sector of the 13th floor. On the same page, NIST reports that the "combustible load in the offices was described as high by interviewed American Express managers." (NCSTAR 1-9, p. 56, para. 4, sent. 3)

REASON FOR COMMENT: Recall that American Express occupied only the southwest sector of the 13th floor. How, then can NIST credibly claim that the combustible load on the entirety of the 11th and 12 floors, both occupied solely by the SEC, was reported to have been high? Were American Express managers given regular access to the SEC offices, such that they would be qualified to comment on the

combustible fuel load there? Moreover, are American Express managers qualified to give an opinion on the quantity of combustible fuel load as compared to offices in the Twin Towers?

SUGGESTED REVISION: Clearly American Express personnel are competent to provide information only on the state of the American Express offices, which were confined to the southwest sector of the 13th floor. NIST must provide real support for its assertion that the combustible load on the 11th and 12th floors was high in order to merit any increase in estimated average combustible fuel load on these floors. If it cannot provide such support, it should re-run its computer models with the lower combustible fuel load on these floors and report those results to the scientific community and the American public.

Combustible Fuel Loading on Floor 13

COMMENT: This comment is regarding NIST's treatment of the combustible fuel load of the 13th floor. On page 375 of NCSTAR 1-9 (para. 1, sent. 8, 9) NIST states as follows: "The density of combustibles on the 13th floor was varied and not well known. The average value [for the 13th floor] was assumed to be the same as the 12th floor." Here again, the only reported description of the combustible load on the 13th floor was from American Express managers, who were competent to comment only on the southwest sector of the 13th floor. In Chapter 3 of NCSTAR 1-9, page 57 (para. 2, sent. 2, 3) NIST reports that in the SEC occupied sections of northern perimeter of the 13th floor were "a hearing room and multiple testimony rooms facing it. There were additional testimony rooms on the northern portion of the east and west sides of the floor, and a storage room at the northwest corner."

Importantly, NIST reports that the "testimony rooms were sparsely furnished, with just a table and a few chairs." (NCSTAR 1-9, p. 57, para. 2, sent. 4) Furthermore, an examination of the schematic diagram of floor 13 (Figure 3-8, p. 57) reveals that the hearing room appears similar to a court room. Court rooms are also sparsely furnished, with a few tables and chairs. Finally, it is doubtful that there was any appreciable level of additional combustibles present in these testimony and hearing rooms.

REASON FOR COMMENT: NIST has apparently greatly overestimated the fuel loading on the 13th floor.

SUGGESTED REVISION: NIST must justify its use of the higher combustible fuel load on the 13th floor in Chapter 9 of the Report with more than just bare assertions. NIST clearly had more information available to it regarding the layout and make up of floor 13, as reported in Chapter 3, than it lets on in Chapter 9. This discrepancy must be reconciled.

Combustible Load Sensitivity Tests

COMMENT: NIST claims that it did sensitivity tests to determine whether these exorbitant combustible fuel loads adversely affected the outcome of its simulations. However, the fact that NIST even performed the sensitivity tests brings up the question of why NIST went to the trouble of increasing the fuel load in the first place if it would have a negligible effect on the simulation. That point aside, Chapter 9 contains statements that directly contradict the results of these alleged sensitivity tests.

On page 381 of NCSTAR 1-9 (para. 3, sent. 3) NIST flatly states that, in its fire simulations for the 12th floor, “[t]he [fire] spread rate was about one-third to one-half slower than that on the lower floors due to the higher fuel load [on the 12th floor simulation].” NIST goes on to report that the burn time across the north face in the simulation was longer than observed in the visual evidence. (NCSTAR 1-9, p. 381, para. 3, sent. 4) NIST then rejects the possibility that this could have resulted from the fuel load being too high, citing the sensitivity analysis in Section 9.3.3. (para. 3, sent. 4-8)

In Section 9.3.3, we find the referenced sensitivity analysis. Here, NIST reports that doubling the fuel load on the 8th floor resulted in the fires moving distinctly more slowly than in the visual evidence. (NCSTAR 1-9, p. 382, para. 5, sent. 1-3) Confusingly, NIST also reports that decreasing the fuel load by more than one-third on floor 12 “showed little effect on the rate of fire progression.” (Id., para. 6, sent. 1-3)

REASON FOR COMMENT: NIST’s contradictory statements raise the question of why reducing the fuel load by more than one-third would show no appreciable effect on the fire rate of progression on the 12th floor, when doubling the fuel load on the 8th floor did result in an appreciable change.

SUGGESTED REVISION: NIST should explain here exactly what the differences in the fire progression rate were in each case and let the public judge whether the effect was “little”. More important, however, is the direct contradiction between NIST’s statement that the “spread rate was about one-third to one-half slower than that on lower floors due to the higher fuel load” (NCSTAR 1-9, p. 381, para. 3, sent. 3) with its statement that decreasing the fuel load to a value equal to that of the lower floors “showed little effect on the fire rate of progression.” (NCSTAR 1-9, p. 382, para. 6, sent. 1-3) Surely NIST can see this direct contradiction. On page 381, it is claimed that higher fuel load slows down the fire spread rate. On page 382, it is claimed that a lower fuel load will not speed up the rate of fire progression. This contradiction must be reconciled.

Fire Simulations for Floors 11 and 13

NIST used the data generated by its 12th floor fire simulation for floors 11 and 13. (NCSTAR 1-9, p. 382, para. 1, 3) The 13th floor simulation used the 12th floor data delayed by one-half hour because visual evidence indicated that the 13th floor fire followed the 12th floor fire. (Id., para. 3, sent. 5) The 11th floor simulation used the 12th floor fire data delayed by 1 hour, although the visual evidence indicated that the 11th floor fire was delayed from the 12th floor fire by 1.5 hours. (NCSTAR 1-9, p. 382, para. 1, sent. 5)

COMMENT: Our first comment in this regard simply notes the discrepancy between the visual evidence that the 11th floor fire was delayed from the 12th floor fire by 1.5 hours, yet in its fire simulations for the 11th floor, it was only delayed from the 12th floor fire by 1.0 hour.

REASON FOR COMMENT: This represents yet another discrepancy in the Report that needs to be rectified.

SUGGESTED REVISION: NIST must explain why the visual evidence was not relied upon for inputs on the 11th floor, when it was relied upon for inputs on the 13th floor. The computer models should be re-run with the 11th floor fire delayed by 1.5 hours, not 1.0 hour, and the results reported accordingly.

COMMENT: Our second comment concerns both the 11th and 13th floor fires. As we demonstrated above, the 12th floor fire simulation is not representative of reality, and likely grossly overestimates the fires that were present there. By using its grossly overestimated 12th floor fire data on both the 11th and 13th floors, it has magnified this error three-fold.

REASON FOR COMMENT: By magnifying an obvious error by three times, the results of all of NIST's subsequent computer models are again called into question.

SUGGESTED REVISION: The computer models should be re-run for the 12th floor using more realistic fire scenarios, and if NIST can still justify using the 12th floor data on the 11th and 13th floors, it should use that more realistic data on both floors. The results should then be reported accordingly.

COMMENT: Our third comment concerns the propagation of error through NIST's approach to using a purely computer model driven approach. On page 382 of NCSTAR 1-9 (para. 1-3, sent. last) NIST acknowledges that its computer models for the fires on floors 11 and 13 "could have led to a mild overestimate of the heating on the north side of the floor."

REASON FOR COMMENT AND SUGGESTED REVISION: In order to assure public confidence in the document, NIST must explain how such an error in overestimating the heating would propagate itself throughout all of NIST's subsequent computer models, and how such propagation of error will affect the reliability of the ultimate results. The Report should be revised to include such a propagation of error analysis.

Chapter 11: Structural Analysis of Initial Failure Event

Section 11.4 – Structural Response to Case B and Case C Fires

COMMENT: In Section 11.4 (NCSTAR 1-9, p. 523-532), NIST goes through a detailed comparison of the structural response of the lower floors of WTC 7 to Case B and Case C fire scenarios. Case B used gas temperatures that were 10% higher than Case A, while Case C used gas temperatures that were 10% lower than Case A. No analysis of the structural response is shown or discussed for Case A.

On page 533 of NCSTAR 1-9 (para. 1, sent. 1) NIST makes the unsupported assertion that “comparison of Case B and Case C results at 4 h (Section 11.3.3) showed that the Case C structural response would be nearly identical to the Case B structural response at a time between 4.0 h and 4.5 h.” However, when we read Section 11.3.3, we see that the analysis of Case C structural response was not carried out to 4.5 hours. Instead, we see that the response of Case C at 4.0 h was somewhat similar to the response of Case B at 3.5 h. NIST must explain how it extrapolated the Case C damage to 4.5 hours, when it was using lower temperatures in Case C than in Case B.

Also, no detailed analysis is disclosed for the Case A temperatures. NIST must include this data generated by Case A temperatures in its Report so the public can independently determine whether Case A profiles should be used in the subsequent LS-DYNA model.

REASON FOR COMMENT: Most important is the fact that NIST’s use of the structural response to only Case B temperatures in its subsequent LS-DYNA model represents yet another example of NIST choosing input data that would tend to overestimate the temperatures and structural damage caused during the WTC 7 fires. We explained above how NIST did this before with respect to gross overestimates of combustible loads on floors 11, 12 and 13. These happen to be the exact floors on which the most damage was caused in NIST’s black box model. Why did NIST not use the Case A and Case C structural response in the LS-DYNA model? Or, if it did, why did it not report the results of these models?

SUGGESTED REVISION: The final report must be revised to correct this error. If Case A and Case C structural responses were never used with the LS-DYNA model, the models should be re-run and the results reported to the scientific community and the American people. This is especially true in light of the fact that the 3.5 h Case B structural response did not result in global building collapse in the LS-DYNA model.

Chapter 12: WTC Global Collapse Analysis

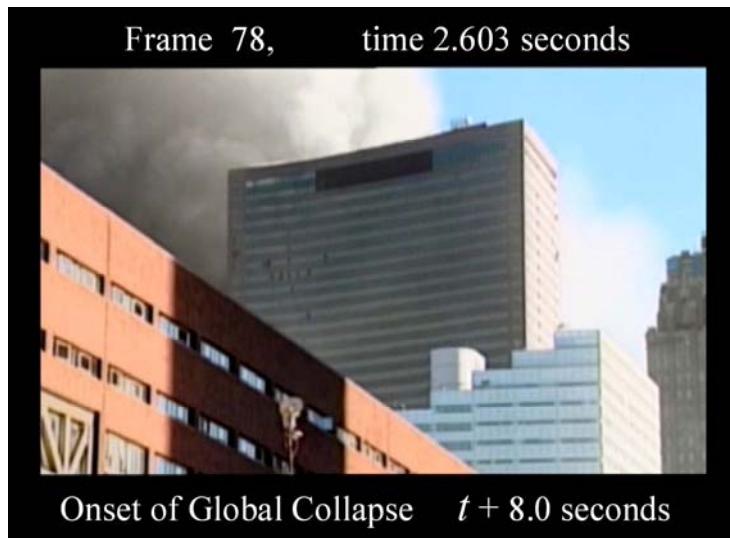
Section 12.5.3 – Collapse Time

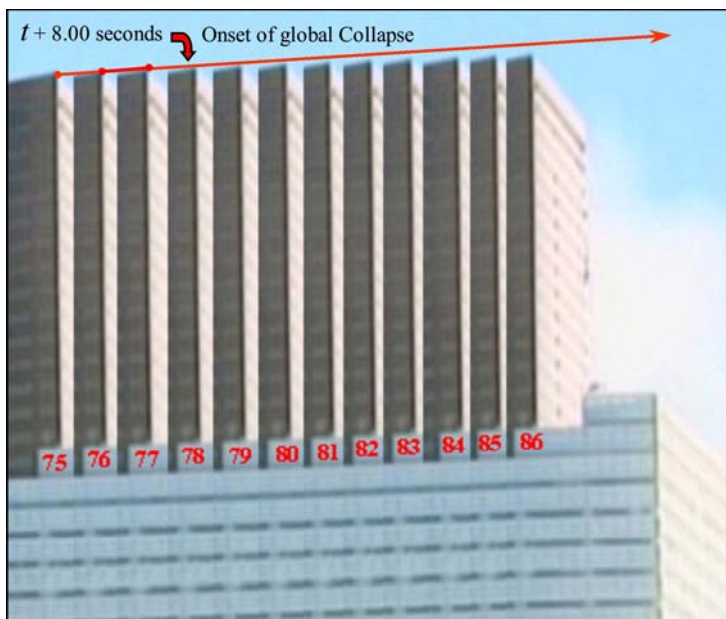
COMMENT: This comment concerns NIST’s estimation of the time it took for the WTC 7 structure to fall. Specifically, this concerns NIST’s comparison to the actual descent time with a hypothetical free-fall time. (NCSTAR 1-9, p. 595; NCSTAR 1A, p. 40-41) Basically, NIST took two data points, and assumed a constant acceleration throughout the collapse. (Id.) The first data point was allegedly taken at the time the top of the parapet wall on the roofline of the north face began descending. The second data

point was allegedly taken at the time the roofline was no longer visible in Camera 3. NIST claims that the time it takes for the building to fall this distance, 242 feet, is 5.4 seconds, plus or minus 0.1 seconds. No graphical or visual support is given for this time estimate.

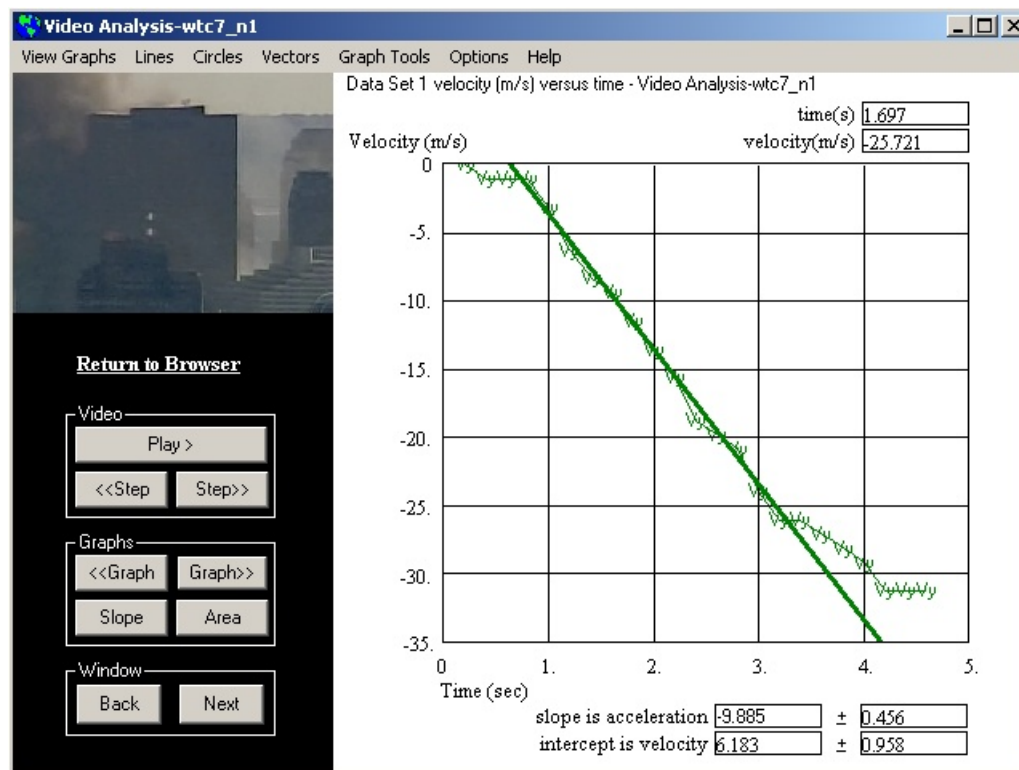
REASON FOR COMMENT: Members of this group have conducted an independent analysis of the Camera 3 footage and come to an entirely different conclusion regarding the collapse time. Our analysis was done on a frame-by-frame basis using a frame rate of 29.97 frames per second. As shown in the figure below, our analysis concludes that it takes 3.87 seconds for the top of the roofline to descend out of view of Camera 3. This time matches almost exactly the free-fall time.

SUGGESTED REVISION: NIST must revise its Report to show the exact frames it used from Camera 3 in determining the time it took for the roofline to fall out of view. 5.4 seconds appears to be a gross overestimate. The frames we used in our collapse analysis are shown below (times “t + X seconds” reference the times given in NIST’s Appendix L, Table L-1) along with a graphical analysis of how we determined which frame represented the onset of global collapse:





Members of this group have used the Physics Toolkit computer software to plot Velocity vs. Collapse Time using discrete data points gathered during the entire collapse from the view NIST calls Camera 2. This plot is reproduced below and provides a much more detailed look at the dynamics of the WTC 7 collapse than is provided by NIST's two-data-point analysis. Also included in the graph is a linear regression for approximately 2.6 seconds of the collapse that appears to have a constant acceleration. As can be seen, the slope (acceleration) during this portion of the collapse was approximately constant at about 9.8 m/s/s, or acceleration due to gravity with little to no resistance below. The r-squared value for this linear regression analysis was 0.9931 – a very good fit. This clearly demonstrates that NIST is being extremely misleading in reporting to the public that the structure did not descend at free-fall speed, especially given the implications of this documented feature of WTC 7's destruction.



Chapter 8: Initiating Event Hypothesis

Inconsistencies Between Report and NIST Technical Presentation Slides

COMMENT: On page 353 of NCSTAR 1-9 (para. 1, sent. 9) NIST states that “Buckling of other floor beams followed as shown in Figure 8-27 (a), leading to collapse of the floor system, and rocking of the girder off its seat at Column 79 as shown in Figure 8-27(b).” Slide 33 of Dr. Sunder’s August 26, 2008 technical presentation states that “Forces from thermal expansion failed the connection at Column 79, then pushed the girder off the seat.” (http://wtc.nist.gov/media/WTC7_Technical_Briefing_082608.pdf)

REASON FOR COMMENT: There seems to be an inconsistency in what NIST is telling the public. In the Report it seems as if the floor system collapses, which drags the girder off its seat to the east. In Dr. Sunder’s presentation, the floor beams appear to remain rigid and push the girder off its seat to the west. These conflicting statements make it difficult for the public to determine which story NIST actually believes.

SUGGESTED REVISION: NIST must reconcile the difference between its public presentation and the substance of the Report.

“Perfectly Fixed” Exterior Columns and Rigid Floor Beams

COMMENT: On page 350 of NCSTAR 1-9 (para. 2) the exterior columns and column 44 were modeled as “perfectly fixed” at a number of locations during the finite element analysis of the northeast corner of the building. This computer model was purporting to demonstrate that thermal expansion could cause the girder to disconnect from Column 79. Obviously, if the floor beams were to elongate due to thermal expansion, it would expand in both axial directions. This, in turn, would put pressure on whatever was connected to each end of the expanded beam.

REASON FOR COMMENT: To the extent “perfectly fixing” the exterior columns and column 44 caused the computer model to neglect the pressure put on the exterior columns due to thermal expansion, the computer model does not represent reality. The exterior columns should have been allowed to bow outward in response to this pressure. It is also unclear whether the floor beams were allowed to sag as they heated in the computer model. In NIST’s report on the Twin Towers, the main reason given for global collapse initiation was sagging floor beams. If NIST did not allow the floor beams to sag in its WTC 7 model, then it did not allow any of the thermal expansion to express itself as sagging rather than pressure on the connections. Even the Cardington tests cited by NIST showed that floor beams to sag when they are heated.

SUGGESTED REVISION: NIST must more clearly explain how the thermal expansion of the floor beams in both axial directions was accounted for in the computer models. If “perfectly fixing” the exterior columns caused all of the thermal expansion to occur in one direction, the computer models needs to be modified to comport with reality, and allow outward bowing of the external columns. Also, if the floor beams and girders were not allowed to sag as they heated, there is a fundamental disconnect between the WTC 7 computer models and the WTC 1 and 2 computer models. The computer models should be re-run with appropriate revisions made to the floor beam properties, which allow them to sag as they heat.

Temperatures Applied to Beams and Girders

COMMENT: In Figure 8-25 on p.352 of NCSTAR 1-9, NIST applies temperatures of 600°C and 500°C to the floor beams and girders, respectively, over a period of about 2.6 seconds. Putting aside for a moment the fact that applying that much heat over a 2.6 second time interval could not possibly approximate the reality of the fires at WTC 7, other problems still remain. For example, these extreme temperatures were applied uniformly for all nodes of the beams and girders. (NCSTAR 1-9, p. 351)

REASON FOR COMMENT: On page 452 of NCSTAR 1-9, NIST only reports that some “sections” of the floor beams exceeded 600°C. Nowhere does NIST indicate that the computer models show uniform temperatures of 600°C for floor beams and virtually no information is given for temperatures of girders. Again, these temperatures are applied uniformly over an extremely small amount of time, which is not representative of an actual fire.

SUGGESTED REVISION: Run the computer models for the northeast section of floors again using realistic temperatures and realistic application times. Report the results accordingly.

Only High Explosives Considered in Hypothetical Blast Event

COMMENT: In its analysis of “hypothetical blast scenarios” that might have lead to the collapse of WTC 7, NIST only considers blast events using RDX, an extremely high explosive. (NCSTAR 1-9, p. 355, last sentence) NIST goes on to argue that because no loud sounds were heard, and because no window breakage was observed, that RDX was not used to bring down WTC 7.

REASON FOR COMMENT AND SUGGESTED REVISION: However, as documented by Kevin Ryan at the Journal of 9/11 Studies (http://www.journalof911studies.com/volume/2008/Ryan_NIST_and_Nano-1.pdf) many scientists working for and associated with NIST have experience with nanoenergetic compounds, or nanothermites, that have the potential to be used for building demolitions. And because nanothermites are primarily high-temperature incendiaries rather than explosives, they could cause damage to steel structures without producing the sound and destruction levels associated with RDX. Because NIST personnel have intimate experience with these materials, NIST should revise its report to specifically analyze whether such nanoenergetic materials could have been used as a component in a “hypothetical blast scenario” at WTC 7.

Furthermore, the National Fire Protection Association Manual for fire and explosion investigations, in Section 921, very clearly indicates that the possibility of explosives should have been thoroughly investigated by NIST. Specifically in NFPA 921 18.3.2 “High Order Damage” – “High-order damage is characterized by shattering of the structure, producing small, pulverized debris. Walls, roofs, and structural members are splintered or shattered, with the building completely demolished. Debris is thrown great distances, possibly hundreds of feet. High-order damage is the result of rapid rates of pressure rise.” WTC 7 clearly met this definition. Therefore NIST should have investigated more thoroughly the possibility that explosive were used. Specifically, the use of “exotic accelerants” should have been investigated. In NFPA 921 19.2.4 – “Exotic Accelerants,” three indicators were clearly met that should have led to a thorough investigation into the possible use of “exotic accelerants,” specifically as stated in the guideline, “Thermite mixtures.” NIST should comply with NFPA Section 921 and test the debris from WTC 7 for thermite residues and report the results to the scientific community.

Omissions from the NIST Report

Foreknowledge of Collapse

NIST omitted from the Report information relating to foreknowledge by several groups of people that WTC 7 was going to collapse.

What we mean by foreknowledge is a quality of detail and a strength of conviction that allow us to say, in light of the building's collapse at approximately 5:21 p.m., that they *knew* in advance that it was coming down.

Such knowledge is highly significant in light of the facts that (a) no steel framed skyscraper in history (indeed, NIST says, "no tall building" in history) had ever before collapsed from fire alone; and (b) the collapse, according to NIST, was the result of a series of accidental and unpredictable factors, which did not come together in such a way as to determine the fate of the building until minutes, or possibly even seconds, before the collapse took place.

In any situation where someone demonstrates foreknowledge of an extremely unusual event, the possibility must be considered that the knowledge derived from those who had control over the event. In other words, foreknowledge of WTC 7's collapse greatly strengthens our suspicions that the building was subjected to controlled demolition and that the knowledge of its demise derived ultimately from those who intended to bring it down.

NIST has tried to evade the issue of foreknowledge of WTC's collapse by implying:

(a) that the FDNY, on the scene, saw the damage to the building caused by the collapse of WTC 1 and rationally concluded that WTC 7 might collapse.

From NIST NCSTAR 1A, p.16:

"The emergency responders quickly recognized that WTC 7 had been damaged by the collapse of WTC 1...

As early as 11:30 a.m., FDNY recognized that there was no water coming out of the hydrant system to fight the fires that were visible. With the collapses of the towers fresh in their minds, there was concern that WTC 7 too might collapse..."

(b) that an engineer, early in the day, saw the damage to the building and concluded it might collapse, passing on this assessment to others (Lead Investigator Shyam Sunder, in a discussion with Graeme MacQueen on CKNX Radio, Wingham, Ontario, Aug. 25, 2008)

It is true that damage to WTC 7 was directly witnessed by some firefighters and led a few of them (about seven) to worry that the building might collapse, but the great majority (approximately 50) who were worried about collapse did not base this worry on what they perceived but on what they were told. (See Graeme MacQueen, "Waiting for Seven: WTC 7 Collapse Warnings in the FDNY Oral Histories", *Journal of 9/11 Studies*, June 11, 2008) Moreover, while it is apparently also true that an engineer communicated his opinion, early in the day, that the building might collapse, neither this communication nor

communications from the FDNY is sufficient to explain the evidence of foreknowledge that we possess.

Below are seven reasons why the above NIST explanations of foreknowledge are inadequate. One example is given to illustrate each of the seven reasons. More details can be found in the paper by Graeme MacQueen titled "Waiting for Seven: WTC 7 Collapse Warnings in the FDNY Oral Histories" published at the Journal of 9/11 Studies (<http://www.journalof911studies.com/volume/200701/MacQueenWaitingforSeven.pdf>).

1. Certainty

To worry that a damaged building *might* collapse in some fashion is one thing; but to be certain that it *will* collapse is another. Detailed study of the accounts of the FDNY shows that over half of those who received warnings of WTC 7's collapse (where degree of certainty can be determined from the reports) *were certain or were told with certainty* that it was coming down. (The figures are: 31 out of 58. See "Waiting for Seven".)

2. Early announcement

If someone was observing the fires in WTC 7 and was able to determine, in the last few moments of the building's existence, that a peculiar set of circumstances was beginning to threaten the building, that would be one thing; but to receive warnings of the building's collapse well before this set of circumstances was in place raises far more suspicions. Yet a detailed study of the FDNY reports show that of the 33 cases where the time of warning can be determined, in ten cases warnings were received two or more hours in advance and in six cases warnings were apparently received four or more hours in advance. (See "Waiting for Seven.") In other words, long, long before the unique set of circumstances had come together to cause the building's collapse, the collapse was being spoken of widely.

3. Precision

If the collapse warnings derived from vague worries and concerns they would not have been precise. No building had come down from these causes before, and, in fact, *complete collapse* such as happened to WTC 1, WTC 2, and WTC 7 was very rare, apart from cases of controlled demolition. That is why FDNY member James McGlynn could say on 9/11, speaking of one of the Towers, "Any time I've heard of a collapse, it was never an entire building like this turned out to be." (See "Waiting for Seven.") Yet, despite the rareness of complete collapse, many people apparently knew in advance that WTC 7 would be undergoing such a collapse. Consider the following from the FDNY oral histories:

Q. "Were you there when building 7 came down in the afternoon?"

A. "Yes."

Q. "You were still there?"

A. "Yes, so basically they measured out how far the building was going to come, so we knew exactly where we could stand."

Q. "So they just put you in a safe area, safe enough for when that building came down?"

A. "5 blocks. 5 blocks away. We still could see. Exactly right on point, the cloud stopped right there." (See "Waiting for Seven.")

4. New information

If the collapse warnings derived from worries and concerns expressed early in the day by engineers and firefighters, why would the collapse of WTC 7 have been reported by CNN (one hour and 10 minutes in advance) and BBC (23 minutes in advance) as *breaking news* based on just received information? CNN anchor Aaron Brown said "*We are getting information now.*" CNN anchor Judy Woodruff: "*We're hearing for the first time*" (See Appendix.) BBC anchor: "*We've got some news just coming in*".

5. Premature announcement

CNN and the BBC did not merely report that the building was damaged or that it might collapse; they *prematurely announced its actual collapse*.

CNN's Aaron Brown, one hour and ten minutes in advance of the collapse: "We are getting information now that one of the other buildings, Building 7, in the World Trade Center complex, is on fire and has either collapsed or is collapsing..."

BBC anchor, 23 minutes before the collapse: "the Salomon Brothers Building in New York, right in the heart of Manhattan, has also collapsed."

No satisfactory explanation has been forthcoming about these premature announcements, which were obviously based on data fed to these announcers.

6. Continuity

The BBC *continued to announce* that WTC 7 had collapsed, even when the building could be seen standing directly behind reporter Jane Standley, for about 17 minutes until the story was pulled abruptly.

When CNN personnel realized they had made an error in their early announcement, they could simply have corrected it. They could, at the very least, have withdrawn their attention from WTC 7 and stopped covering it since it was obviously still standing. Instead, CNN *continued to keep WTC 7 in the forefront of its coverage* over the hour and ten minutes preceding its collapse, repeatedly warning that it was going to come down and keeping the image of the building in front of the viewer until it had actually collapsed. (See Appendix.)

7. Progression

According to NIST's study, WTC 7's fires had been reduced from ten floors, soon after the collapse of WTC 1, to essentially two floors as the collapse time approached. This was a building in which the fires were actually dying down. Why, then, did CNN show awareness of the building's approaching doom, and why did it revise its captions accordingly, from "may collapse" to "poised to collapse" (approximately 15 minutes before actual collapse) and then to "on verge of collapse" (approximately 1.5 minutes before actual collapse). (Appendix)

Any one of these seven factors would be enough to make us consider the possibility of *foreknowledge* of WTC 7's collapse. Taken together, they make an unanswerable case.

As further support, below we have provided a timeline of events based on CNN's coverage of Building 7. The times in the left-hand column are within 30 seconds of actual time.

Time	Event in progress
4:11:16	Anchor Aaron Brown: "We are getting information now that one of the other buildings, Building 7, in the World Trade Center complex, is on fire and has either collapsed or is collapsing and I, I...[pauses, looks at monitor, where WTC 7 stands, apparently firm and stable] you, to be honest, can see these pictures a little bit more clearly than I..." Fixed Caption near bottom of screen: "Building 7 at World Trade Ctr. on fire, may collapse"
4:13:25	Anchor Judy Woodruff reaffirms what Aaron Brown has just announced, saying "we're hearing for the first time" that "one of the support buildings [in the World Trade Center complex] is on the verge of collapse if it has not already collapsed". Fixed Caption near bottom of screen: "Building 7 at World Trade Ctr. on fire, may collapse"
4:21:16	Judy Woodruff : "one of the buildings may have collapsed or may be in the process of collapsing" Fixed Caption near bottom of screen: "Building 7 at World Trade Ctr. on fire, may collapse"
4:35:58	Running Caption at very bottom of screen scrolls by, saying that WTC 7 has caught fire and may collapse
4:50:33	After many split screen shots with WTC 7 as one of two images, we now get WTC 7 filling most of the screen Fixed Caption near bottom of screen: "Building 7 at World Trade Ctr. on fire, may collapse"
5:06:15	Running Caption at very bottom of screen scrolls by, saying: "World Trade Center Building 7 ablaze, poised to collapse"
5:19:31	Fixed Caption: "Building 7 at World Trade Ctr. on fire, on verge of collapse"
5:21:12	Shot of NY skyline with WTC 7 gone and large clouds of dust rising. Anchor Aaron Brown announces: "just in the last few seconds another building—we will speculate carefully here that it was Building Number 7...has collapsed"

The NIST Report should be revised to include a detailed analysis of all of the reports of specific foreknowledge of the collapse of Building 7. NIST's Lead Investigator, Dr.

Sunder, when challenged with reports like this during radio interviews recently has stated that NIST's investigation was not a criminal investigation, but instead is a technical one. However, this position belies the fact that NIST did opine in the Report that the controlled demolition hypothesis was unlikely because NIST didn't believe that the explosives could be placed without being detected. Such an opinion is not a technical opinion, but an operational one that goes more to logistically how a criminal could have committed the crime than technically how it was done. Clearly NIST could consider the many reports of foreknowledge and note the impossibility of such specific and detailed foreknowledge. The Report should be revised accordingly.

FEMA Building Performance Study – Appendix C

The NIST WTC 7 Report does not attempt to explain the “*severe high-temperature corrosion attack*” on apparently the only piece of WTC 7 steel which was tested, as documented in Appendix C, “Limited Metallurgical Examination” of the Federal Emergency Management Agency (FEMA) Building Performance Study, which can be found at the link below on the NIST website.

http://wtc.nist.gov/media/AppendixC-fema403_apc.pdf

The detailed further study deemed necessary by FEMA was – as far as we know - never done, and the observed “*intergranular melting*” of the steel can not be explained within the framework of the present NIST hypothesis. Why would NIST ignore the recommendations made by FEMA investigators for additional research of the unexplained material behavior?

In a taped interview Worcester Polytechnic Institute Fire Engineering professor Dr. Jonathan Barnett, one of the authors of the 13 page report in Appendix C, made the comment that normal investigative protocol was not followed in the case of the WTC 7 collapse. He says that the steel from WTC 7 was not photographed, examined, and cataloged before being removed. The comments he makes are at the 3:00 minute mark in the below linked video.

<http://www.911podcasts.com/display.php?cat=9998&med=0&ord=Name&str=180&vid=58&epi=0&typ=0>

It is reported that WTC 7 was fully evacuated long before its collapse and that there were no fatalities or missing persons involved with its demise. The photos in the figures below show the collapsed WTC 7 to have its debris field confined to within a short distance of its footprint.



**Figure 1. The rubble pile of WTC 7 on Sept. 15, 2001,
four days after the building collapsed**



Figure 2. NOAA aerial photo of Ground Zero on Sept. 23, 2001 showing the relative location of the WTC 7 rubble with respect to debris of the other WTC buildings and a somewhat clear line of demarcation on Vesey Street

In addition to showing the relatively tight confinement of the debris field of WTC 7, the photo in Figure 2 also shows that debris from WTC 6 and WTC 5 was contained within their footprints or very nearby.

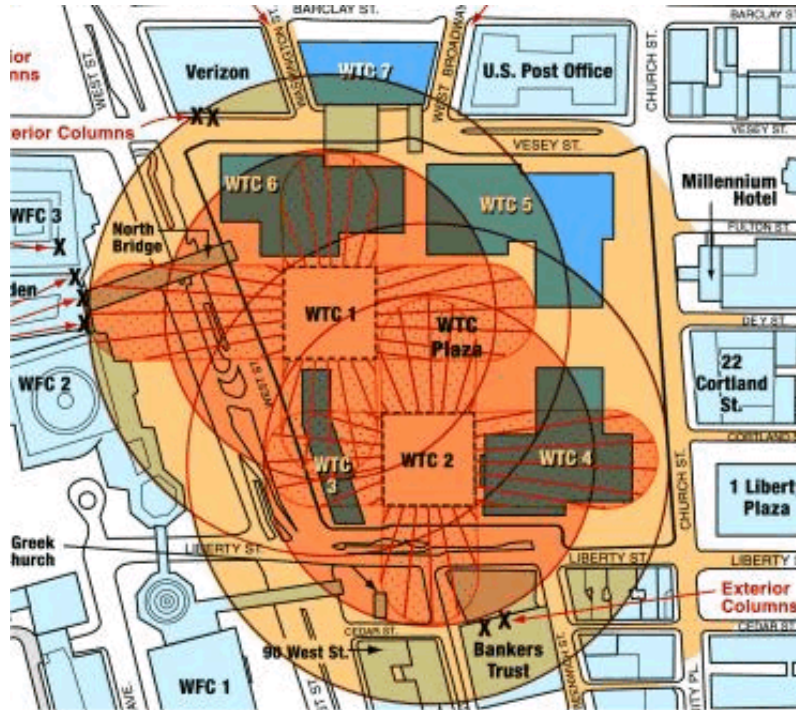


Figure 3. FEMA debris map for the Twin Towers

The seeming separation of the WTC 7 debris field from those of the other buildings, and the fact there were no missing persons or fatalities involved with its collapse, make it hard to accept the History Channel program narrator's comment, in the video above, that the mingling of the steel from the different buildings, and the need for search and rescue, were the reasons for the removal of the WTC 7 steel, before it could be properly photographed, examined, and cataloged, at the collapse site.

Even if the WTC 7 steel was moved, without being examined and cataloged at the site of the collapse, an additional question arises as to why it wasn't recovered and stored for later testing, evaluation, and a systematic forensic analysis. This is especially pertinent in light of the FEMA recommendation that additional research was needed due to the strange findings in their very limited metallurgical examination.

In the August 2008 NIST draft Report on WTC 7 there is no mention of testing of any recovered steel from the collapsed remains of the building. In sections where the properties of the steel need to be discussed reference is curiously made to WTC steel

samples, not specifically those of WTC 7. This can be understood if one is aware that in an earlier draft of the WTC 7 report NIST made the stark admission that “No metallography could be carried out because no steel was recovered from WTC 7. Other physical properties are the same as those estimated in Chapter 8 for the WTC steels”.

Since NIST report on the collapse of WTC 7 suffers from a lack of physical evidence to support its findings, it should go into some level of detail on: why normal investigatory protocol was not followed, why none of the steel was recovered, and whether any laws were violated in not doing so. If there are questions as to the legality of the removal and lack of recovery for investigatory purposes, NIST should recommend that an investigation be commenced to determine who was involved with the decision to remove the steel and why NIST did not receive any of it for its investigation.

There are also several seemingly contradictory issues between the FEMA Building Performance Study Appendix C and the NIST WTC 7 Report, for which no explanations have been provided, and they are:

- NIST states "No steel was recovered from WTC 7" while FEMA section C.2 shows that at least one piece of WTC 7 steel was tested, with the results being alarming, considering the highly unusual formation of a liquid eutectic, intergranular melting, and erosion. Features not seen before, by the experienced investigators, in steel subject to common office fires.
- FEMA section C.3 Summary for Sample 1 states that the steel was heated to around 1,000° C. (1,800° F.), which is much hotter than the steel temperatures NIST is claiming to have caused the collapse, and seemingly far outside the ability of office fires to heat the steel. Additionally, this section states that steel liquefied at these temperatures, due to the formation of the eutectic, which would dramatically lower the usual 2750° F melting point temperature of the steel.
- FEMA Section C.6 Suggestions for Future Research states "It is also possible that the intergranular melting, eutectic formation, and erosion phenomenon started prior to collapse and accelerated the weakening of the steel structure."

Why hasn't the "future research" been done, and the results from it published, especially when FEMA itself suggested that this melting and erosion may have started “prior to collapse”? NIST was charged with investigating the conditions that led to the collapse of WTC 7, and clearly something that possibly occurred prior to collapse and “accelerated the weakening of the steel structure” is something NIST should have investigated. NIST should revise the Report accordingly after it has performed the needed metallurgical analysis.

These public comments on the NIST WTC 7 Report are being submitted by the following individuals:

James R. Gourley, Esq.
Chemical Engineer
International Center for 9/11 Studies
jrpatent@gmail.com

Tony Szamboti
Mechanical Engineer
Architects & Engineers for 9/11 Truth

Richard Gage
AIA Architect
Architects & Engineers for 9/11 Truth

Graeme MacQueen, Ph.D.
Scholars for 9/11 Truth & Justice

Dr. Steven Jones
Ph.D. Physicist
S&J Scientific Co.

Kevin Ryan
Chemist
Scholars for 9/11 Truth & Justice

Chris Sarns
Architects & Engineers for 9/11 Truth

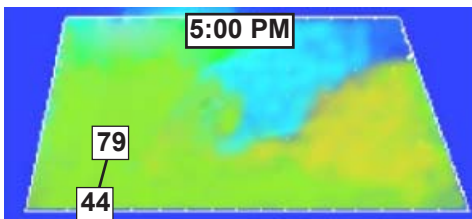
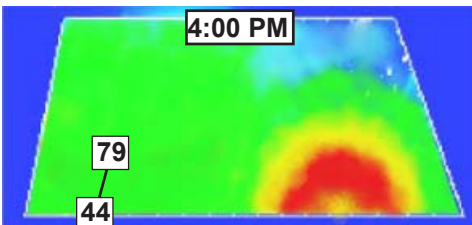
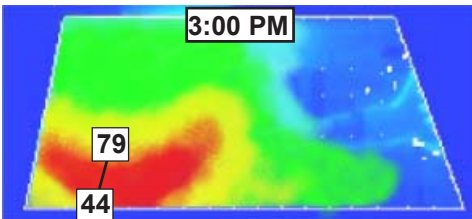
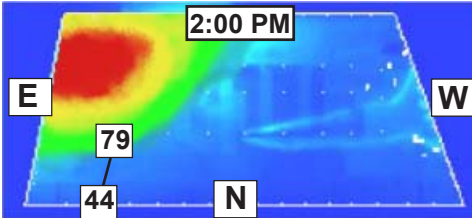
Kamal Obeid, SE PE
Structural Engineer
Architects & Engineers for 9/11 Truth

Scott Grainger, PE
Forensic Engineer
Civil Engineer
Architects & Engineers for 9/11 Truth

Exhibit A
Graphical Examination of NIST
WTC 7 Floor 12 Fire Analysis

AE911Truth Challenges NIST’s WTC 7 Floor 12 Fire Analysis

Architects and Engineers for 9/11Truth
Submitted by Chris Sarns
Progression of fire on Floor 12 of WTC 7
(consistent with photographs)



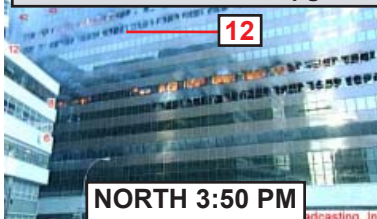
NIST NCSTAR 1-9 Vol. 1 pg. 201



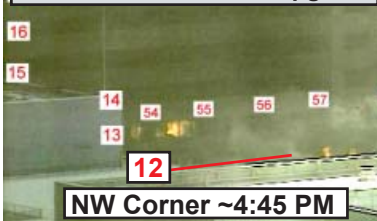
NIST NCSTAR 1-9 Vol. 1 pg. 208



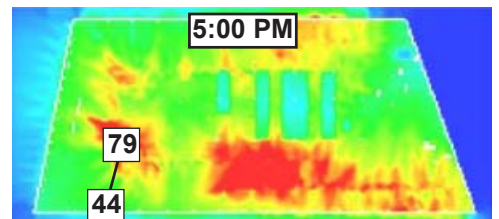
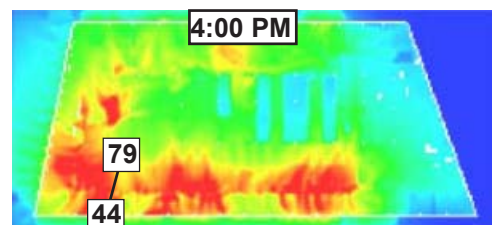
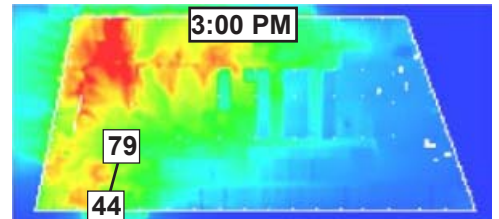
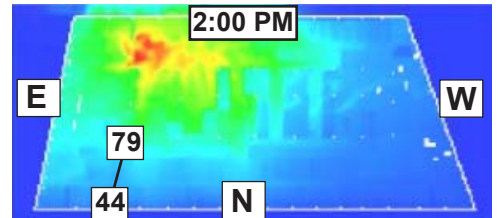
NIST NCSTAR 1-9 Vol. 1 pg. 222



NIST NCSTAR 1-9 Vol. 1 pg. 237



NIST NCSTAR 1-9, Vol. 2, page 383
Figure 9-11. Progression of simulation
fire on Floor 12 of WTC 7.
(NOT consistent with photographs)



According to NIST, the fire on floor 12 caused the girder between columns 79 and 44 under floor 13 to fail at 5:20 PM. Theoretically, this was the beginning of the initiating event that led to the implosion of WTC 7.

On page 383 of NIST NCSTAR 1-9 Vol. 1 (2008), the fire simulations graphic of floor 12 shows the fire burning around column 79 at 4:00 and 5:00 PM. The NIST simulation is not consistent with the photographs of the fire. The photographs show, and the NIST Appendix L report (2004) states “Around 4:45 PM, a photograph showed fires Floors 7, 8, 9, and 11 near the middle of the north face; Floor 12 was burned out by this time.” In fact, it had burned out in the east end before 4:00 PM.

Therefore, the fire on floor 12 could not have caused floor 13 to collapse (at 5:20 PM) and the implosion of WTC 7 could not have occurred as NIST has proposed.